VOLUME XXXVII

INDEX OF SUBJECTS AND AUTHORS

Only main topics are listed and reference is given to the first page of each paper in which they are discussed

N-acetyl-β-hexosaminidase in mouse, 95
'affinity' and femal mule fertility, 105
alcohol dehydrogenase activity in *D. melanogaster*, 227
Altenbuchner, J., 285
Anderson, G., 123
Apoproteins, 1
Appels, R. 209
Arnold, J. T. A., 55
Artzt, K., 221
aspartate transcarbamylase in *D. melanogaster*, 199
atherosclerosis, 11

backcrossing and inbreeding, 239
Bennett, D., 221
Berry, R. J., 221
Blazak, W. F., 161
blood serum lipoproteins, 1
blowfly, Australian sheep, 55
Buehr, M., 303

carbamyl phosphate synthetase in *D. melanogaster*, 199
Cattanach, B. M., 151
Chandley, A. C., 105
Chasalow, F., 123
chloroplast genetic variability, maintenance, 291
Choi, C.-L., 285
cholesterol and coronary heart disease, 1
coat colour mutant in mouse, 95
controlling elements in mouse, 151
coronary heart disease, 1
Cox, B. S., 173
Crowther, C., 311

Dietz, K., 275
dihydroorotase in *D. melanogaster*, 199
dipteran linkage map comparisons, 55
domestic fowl, 161
Dooher, G. B., 221
Drosophila melanogaster
  alcohol dehydrogenase activity and thermostability, 227
  alcohol dehydrogenase electromorphs, 227
  aspartate transcarbamylase, 199
  carbamyl phosphate synthetase, 199
  dihydroorotase, 199
  linkage map, 55
  pyrimidine synthetic pathway, 199
  ribosomal DNA inserts, 209
  rudimentary locus, 199
  type I inserts in DNA, 209

Endow, S., 209
environmental variations and genetic variation, 79
enzyme polymorphism, 79
Ephestia kuehniella, 47
Equus hybrids, 105
extranuclear genes and genetic variation, 291

Fechheimer, N. S., 161
fertility in female mule, 105
finite populations and genetic variability, 291
Foster, G. G., 55
fowl
  embryos with chromosome imbalances, 161
  gonosome-autosome translocations, 161

β-galactosidase of mouse, 95
Gallus domesticus L, 161
gametic selection, 275
genetic variation in varying environments, 79
Gerris differentiation, 253
Gibb, S., 95
globin genes and genetic variation, 133
β-glucuronidase of mouse, 95
Glover, D., 209
glucose phosphate isomerase of mouse, 303
Grinsted, J., 285
Gütze, D., 17

H-2 locus in mouse, 17
Håkansson, E. M., 95
Hammerberg, C., 71
Hendrew, R. W., 123
heterothallism and *Physarum polycephalum*, 113
hinnie, 105
histocompatibility of mouse, 17

Holloway, B. W., 265
Honey, H. K., 113
Hordeum bulbosum, 215
hypercholesterolaemia, 1

ICR-170 mutagenesis in *D. melanogaster*, 199
immune response in mouse, 17
inbreeding for isogeneity in haploid and diploid eukaryotes, 239
Islam, A. K. M. R., 215
isogenicity and inbreeding, 239

Jarry, B., 199
Johnson, F. M., 123
Johnston, P. G., 151, 317

Karlin, S., 33
kidney lysosomal enzymes in mouse, 95
Klein, J., 17
Konovalov, C., 55

Leslie, J. F., 239
Lewis, S. E., 123
linkage maps of diptera, 55
Lucilia cuprina dorsalis, 55
Lund, P. M., 123
Lundin, L.-G., 95
lysosomal enzymes of mouse, 95

MacDougal, P., 123
Mackay, T. F. C., 71
Maffi, G., 55
male fertility of T^{Ori}/t mice, 71
Maruyama, T., 291
maternal inheritance in *Ephestia kuehniella*, 47
mating type locus in *Physarum polycephalum*, 113
McKay, J., 227
McLaren, A., 303
microdifferentiation of *Gerris* populations, 253
mitochondrial genetic variation, maintenance, 291
monosomy in fowl, 161
mouse, controlling elements, 151
  fetus and X-inactivation, 183
  glucose phosphate isomerase, 303
  H-2 polymorphism, 17
  lysosomal enzymes, 95
  male fertility and T^{Ori}, 71
  phosphoglycerate kinase, 151, 183, 317
  pyruvate kinase, 123
  reduced pigmentation (*rp*) gene, 95
  Searle's translocation, 317
  t-complex and male fertility, 71
  t-haplotype, semilethal, 221
  X-chromosome activity in oogenesis, 317
  X-chromosome expression, 183, 317
  X-inactivation, non random, 151, 183
mule, fertility in female, 105
multigenes and genetic variation, 133
Musca domestica L., 55

Nadeau, J. H., 17, 275
Naguib, F. N. M., 199
non-random X-chromosome expression in mouse, 183
non-random X-inactivation, 151

Ohta, T., 133

Pamilo, P., 253
Papaioannou, V. E., 183
Peacock, W. J., 209
Physarum polycephalum selfing mutants, 113
plasmids
  incP mobilisation ability, 311
  incQ, 311
  primes in *Pseudomonas aeruginosa*, 265
  RSF1010, 311
plasmodial formation in *Physarum polycephalum*, 113
Poulter, R. T. M., 113
Pseudomonas aeruginosa plasmids, 265
[*psi*] element of *Saccharomyces cerevisiae*, 173
pyrimidine synthesis in *D. melanogaster*, 199
pyruvate kinase of mouse, 123

recessive gene detectability, 33
retarded development (*rd*) in *Ephestia kuehniella*, 47
reversion analysis of [*psi*] mutations, 173
ribosomal DNA inserts in *D. melanogaster*, 209
Richmond, M. H., 285
Robertson, F. W., 1
Royle, P. L., 265

Saccharomyces cerevisiae [*psi*] mutants, 173
Schmitt, R., 285
Searle's translocation of mouse, 317
selection component analysis, 275
selfing mutants of *Physarum*, 113
Shepherd, K. W., 215
Shire, J. G. M., 95

Takahata, N., 291
Tamarin, R. H., 275
tandem repeat genes and genetic variation, 133
Tavare, S., 17
transposon
  Tn501 (Hg), 285
  Tn1721 (Tc), 285
Traut, W., 47

trisomy in fowl, 161

unequal crossing over and repeat genes, 133

Varvio-Aho, S.-L., 253

Wakeland, E. K., 17
water-strider (*Gerris*) differentiation, 253
West, J. D., 183
wheat-barley chromosome addition lines, 215
Whitten, M. J., 55
Willetts, N., 311
Winter, P. J., 113

X-chromosome controlling element (*Xce*) of mouse, 151
X-inactivation, non-random in mouse, 151, 183

GENETICAL RESEARCH

EDITORIAL BOARD

CHARLOTTE AUERBACH ARTHUR CHOVNICK D. J. FINNEGAN
W. HAYES BRUCE HOLLOWAY D. ISH-HOROWICZ
MARY F. LYON ANNE McLAREN M. VAN MONTAGU J. PAUL
W. J. PEACOCK PETER A. PETERSON R. H. PRITCHARD
A. ROBERTSON R. RILEY

EXECUTIVE EDITOR

E. C. R. REEVE

ASSISTANT EXECUTIVE EDITORS

N. S. WILLETTS

Volume 37. 1981

CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE
LONDON NEW YORK NEW ROCHELLE
MELBOURNE SYDNEY

PUBLISHED BY
THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE

The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, N.Y. 10022

© Cambridge University Press, 1981

Printed in Great Britain at the University Press, Cambridge

CONTENTS

No. 1 (February 1981)

ROBERTSON, FORBES, W. The genetic component in coronary heart disease – a review *page* 1

NADEAU, J. H., WAKELAND, E. K., GÖTZE, D. and KLEIN, J. The population genetics of the *H-2* polymorphism in European and North African populations of the house mouse (*Mus musculus L.*) 17

KARLIN, SAMUEL and TAVARE, SIMON. The detection of a recessive gene in finite populations 33

TRAUT, WALTHERS. *Retarded development of females*, a case of maternal inheritance in a moth, *Ephestia kuehniella* 47

FOSTER, G. G., WHITTEN, M. J., KONOVALOV, C., ARNOLD, J. T. A. and MAFFI, G. Autosomal genetic maps of the Australian Sheep Blowfly, *Lucilia cuprina dorsadis* R.-D. (Diptera: Calliphoridae), and possible correlations with the linkage maps of *Musca domestica* L. and *Drosophila melanogaster* (Mg). 55

HAMMERBERG, CRAIG. The influence of T^{Orl} upon male fertility in *t*-bearing mice 71

MACKAY, TRUDY, F. C. Genetic variation in varying environments 79

GIBBS, S, HÅKANSSON, E. M., LUNDIN, L.-G. and SHIRE, J. G. M. Reduced pigmentation (*rp*), a new coat colour gene with effects on kidney lysosomal glycosidases in the mouse 95

CHANDLEY, ANN C. Does 'affinity' hold the key to fertility in the female mule? 105

ERRATUM 111

No. 2 (April 1981)

HONEY, N. K., POULTER, R. T. M. and WINTER, P. J. Selfing mutants from heterothallic strains of *Physarum polycephalum* 113

JOHNSON, F. M. A variation in mouse kidney pyruvate kinase activity determined by a mutant gene on chromosome 9 123

OHTA TOMOKO. Genetic variation in small multigene families 133

JOHNSTON, P. G. and CATTANACH, B. M. Controlling elements in the mouse. IV. Evidence of non-random X-inactivation 151

BLAZAK, W. F. and FECHHEIMER, N. S. Gonosome-autosome translocations in fowl: the development of chromosomally unbalanced embryos sired by singly and doubly heterozygous cockerels 161

LUND, P. M. and COX, B. S. Reversion analysis of (psi⁻) mutations in *Saccharomyces cerevisiae* page 173

PAPAIOANNOU, VIRGINIA E. and WEST, JOHN D. Relationship between the parental origin of the X chromosomes, embryonic cell lineage and X chromosome expression in mice 183

NAGUIB FARDOS, N. M. and JARRY, BRUNO. Isolation and characterization of deficiencies exposing the rudimentary locus of *Drosophila melanogaster* 199

PEACOCK, W. J., APPELS, R., ENDOW, S. and GLOVER, D. Chromosomal distribution of the major insert in *Drosophila melanogaster* 28S rRNA genes 209

ISLAM, A. K. M. R. and SHEPHERD, K. W. Production of disomic wheat-barley chromosome addition lines using *Hordeum bulbosum* crosses 215

No. 3 (June 1981)

DOOHER, G. B., BERRY, R. J., ARTZT, K. and BENNETT, D. A semilethal *t*-haplotype in the Orkney Islands 221

MCKAY, J. Variation in activity and thermostability of alcohol dehydrogenase in *Drosophila melanogaster* 227

LESLIE, JOHN F. Inbreeding for isogeneity by backcrossing to a fixed parent in haploid and diploid eukaryotes 239

VARVIO-AHO, SIRKKA-LIISA and PAMILO, PEKKA. Spatio-temporal microdifferentiation of water-strider (*Gerris*) populations 253

ROYLE, P. L. and HOLLOWAY, B. W. New prime plasmids from *Pseudomonas aeruginosa* 265

NADEAU, JOSEPH H., DIETZ, KLAUS and TAMARIN, ROBERT H. Gametic selection and the selection component analysis 275

ALTENBUCHNER, J., CHOI, C-L., GRINSTED, J., SCHMITT, R. and RICHMOND, M. H. The transposons Tn*501*(Hg) and Tn*1721*(Tc) are related 285

TAKAHATA, NAOYUKI and MARUYAMA, TAKEO. A mathematical model of extranuclear genes and the genetic variability maintained in a finite population 291

MCLAREN, ANNE and BUEHR, MIA. GPI expression in female germ cells of the mouse 303

WILLETTS, NEIL and CROWTHER, CAROL. Mobilization of the non-conjugative IncQ plasmid RSF1010 311

JOHNSTON, P. G. X chromosome activity in female germ cells of mice heterozygous for Searle's translocation T(X;16)16H 317

VOLUME XXXVIII

INDEX OF SUBJECTS AND AUTHORS

Only main topics are listed and reference is given to the first page of each paper in which they are discussed

D-alanine-dehydrogenase in *Escherichia coli*, 197
allozyme heterozyosity and divergence, 71
Andrews, S. J., 47
aneuploids, transcription and gene dosage, 103
Annear, D. I., 217
Arst, Jr., H. N., 171
Aspergillus nidulans, deletion in prn, 171

Bailey, C. R., 171
Beck, M. L., 333

cataract of mouse lens, 337
Cattanach, B. M., 57
chimaeras in mice, 25
choline catabolism in *Pseudomonas aeruginosa*, 251
Chovnick, A., 281
cleft palate induction in mice, 327
controlling elements in mice, 57
copper and mice, 333
cortisone induction of cleft palate in mice, 327

dosage compensation, 103
Drosophila melanogaster
  bobbed, 1
  chitin biosynthesis, 297
  cryptocephal suppressor mutants, 297
  dosage compensation, 103
  female sterility, 125
  gene conversion, 281
  heterozygosity and geographical distribution, 137
  intragenic recombination, 281
  male recombination factors (MRF), 125
  meiotic abnormality, induction of, 125
  nucleolus, 1
  ribosomal RNA genes, 1
  transcription in, 103
  satellite DNA, 237
  X chromosome aneuploids and transcription, 103
Drosophila simulans, satellite DNA, 237
Drosophila spp. and distribution of heterozygosity, 137
Duttagupta, A. K., 103

Ejchart, A., 267
Escherichia coli
  D-alanine-dehydrogenase-less mutants, 197
  alnA, 197
  dad, 197
Evans, L., 47

Falconer, D. S., 25
food intake in large and small mice, 9
Franklin, F. C. H., 197
Fraser, F. C., 327

galactosyltransferase in mice, 225
Gauld, I. K., 25
gene conversion in *Drosophila melanogaster*, 281
gene dosage and aneuploids, 103
α-glucosidase in mice, 47
growth rates in mice, 9
Grubb, W. B., 217

α-haemoglobin gene distribution, 97
highly repetitive DNA in *Drosophila simulans*, 237
Hill, W. G., 157, 209
Hilliker, A. J., 281
Holmes, R. S., 337

intragenic recombination in *Drosophila melanogaster*, 281

Jarvis, S. E., 337
Jones, S. A., 171

Klein, J., 315

Land, R. B., 157
Latter, B. D. H., 137
lens opacity in mice, 337
linkage disequilibrium and effective population size, 209
Lohe, A. R., 237

Lush, I. E., 93
Lyon, M. F., 337

Maddern, R. H., 1
Matsumoto, H., 251
Menkes' disease, 333
mitochondrial mutants of *Saccharomyces cerevisiae*, 267
mouse
  aggregation chimaeras, 25
  body size and chimaeras, 25
  brachyury, 315
  cataract of lens, 337
  chimaeras and control of body size, 25
  chromosome 10, 337
  chromosome 17, 47, 115, 315
  chromosome X, 57
  cleft palate induction, 327
  controlling elements, 57
  copper localization in duodenal mucosa, 333
  cortisone-induced cleft palate, 327
  duodenal mucosa and copper, 333
  energy conversion, 9
  galactosyltransferase activity, 225
  α-glucosidase, 47
  growth and selection, 9
  lens opacity, 337
  Neu-1, 47
  neuraminidase, 47
  sperm-egg binding, 225
  spermatogenesis, 115, 225
  sucrose octaacetate, 93
  Ta, 57
  t-complex, 115, 225, 315
  tasting, genetics of, 93
  Tcp-1, 115
  tortoiseshell and copper, 333
  thyroxine levels and selection, 157
  transmission ratios and *t*-complex, 315
  Xce, 57
Mukherjee, A. S., 103

Nakazawa, T., 251
neuraminidase, 47

Ohta, S., 251

Papworth, D., 57
Pelecanos, M., 125
Peters, J., 47
phosphoglucomutase in mice, 327
population size and linkage disequilibrium, 209
Prasad, J., 103
L-proline catabolism in *Aspergillus nidulans*, 171
Pseudomonas aeruginosa, *cat A*, *chu*, *dcu*, *pcaA*, *pobA*, 251
Putrament, A., 267

repeated genes, distribution, 97
ribosomal genes of *Drosophila melanogaster*, 1
Roberts, R. C., 9, 25

Saccharomyces cerevisiae
  mit, 267
  mitochondrial mutagenesis, 267
satellite DNA in *Drosophila melanogaster*, 237
Sayers, I., 337
Sheedlo, H. J., 333
Shur, B. D., 225
Silver, L. M., 115
sister chromatid exchange, 97
Skibinski, D. O. F., 71
Sparrow, J. C., 297
spermatogenesis in mice, 115, 225
Stamatis, N., 125
Staphylococcus aureus, unstable drug resistance, 217
  plasmids in, 217
Styrna, J., 315
sucrose octaacetate, 93
Swallow, D. M., 47

Takahata, N., 97
tasting and mouse genetics, 93
Taylor, B. A., 327
Terawaki, Y., 251
thyroxine (T4) levels in mice, 157
Tilakaratne, N., 157
tri-iodo thyronine (T3) levels in mice, 157

Vekemans, M., 327
Venables, W. A., 197

Ward, R. D., 71
Wijsman, H. J. W., 197
Williams, D. A., 25

X–Y exchange in *Drosophila melanogaster* males, 1

Yannopoulos, G., 125

GENETICAL RESEARCH

EDITORIAL BOARD

CHARLOTTE AUERBACH ARTHUR CHOVNICK D. J. FINNEGAN
W. HAYES BRUCE HOLLOWAY D. ISH-HOROWICZ
MARY F. LYON ANNE McLAREN M. van MONTAGU J. PAUL
W. J. PEACOCK PETER A. PETERSON R. H. PRITCHARD
A. ROBERTSON R. RILEY

EXECUTIVE EDITOR

E. C. R. REEVE

ASSISTANT EXECUTIVE EDITORS

N. S. WILLETTS
TRUDY F. C. MACKAY

Volume 38. 1981

CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE
LONDON NEW YORK NEW ROCHELLE
MELBOURNE SYDNEY

PUBLISHED BY
THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE

The Pitt Building, Trumpington Street, Cambridge CB2 1RP
32 East 57th Street, New York, N.Y. 10022

© Cambridge University Press, 1981

Printed in Great Britain at the University Press, Cambridge

CONTENTS

No. 1 (August 1981)

MADDERN, R. H. Exchange between the ribosomal RNA genes of *X* and *Y* chromosomes in *Drosophila melanogaster* males *page* 1

ROBERTS, R. C. The growth of mice selected for large and small size in relation to food intake and the efficiency of conversion 9

FALCONER, D. S., GAULD, I. K., ROBERTS, R. C. and WILLIAMS, D. A. The control of body size in mouse chimaeras 25

PETERS, JOSEPHINE, SWALLOW, DALLAS M., ANDREWS, SANDRA J. and EVANS, LORRAINE. A gene (*Neu-1*) on chromosome 17 of the mouse affects acid α-glucosidase and codes for neuraminidase 47

CATTANACH, B. M. and PAPWORTH, D. Controlling elements in the mouse. V. Linkage tests with X-linked genes 57

SKIBINSKI, D. O. F. and WARD, R. D. Relationship between allozyme heterozygosity and rates of divergence 71

LUSH, IAN E. The genetics of tasting in mice. I. Sucrose octaacetate 93

TAKAHATA, NAOYUKI. A mathematical study on the distribution of the number of repeated genes per chromosome 97

No. 2 (October 1981)

PRASAD, JAYASHREE, DUTTAGUPTA, ASHISH K. and MUKHERJEE, A. S. Transcription in *X*-chromosomal segmental aneuploids of *Drosophila melanogaster* and regulation of dosage compensation 103

SILVER, LEE M. A structural gene (*Tcp-1*) within the mouse t complex is separable from effects on tail length and lethality but may be associated with effects on spermatogenesis 115

STAMATIS, NIKOS, YANNOPOULOS, GEORGE and PELECANOS, MICHAEL. Comparative studies of two male recombination factors (MRF) isolated from a Southern Greek *Drosophila melanogaster* population 125

LATTER, B. D. H. The distribution of heterozygosity in temperate and tropical species of *Drosophila* 137

TILAKARATNE, N., HILL, W. G. and LAND, R. B. Direct and correlated responses to selection for plasma thyroxine levels in mice 157

ARST, HERBERT N., JONES, SUSAN A. and BAILEY, CHRISTOPHER, R. A method for the selection of deletion mutations in the L-proline catabolism gene cluster of *Aspergillus nidulans* 171

FRANKLIN, F. C. H., VENABLES, W. A. and WIJSMAN, H. J. W. Genetic studies of D-alanine-dehydrogenase-less mutants of *Escherichia coli* K12 197

No. 3 (December 1981)

HILL, WILLIAM G. Estimation of effective population size from data on linkage disequilibrium 209

GRUBB, W. B. and ANNEAR, D. I. Unstable drug resistance in *Staphylococcus aureus* M4 217

SHUR, BARRY D. Galactosyltransferase activities on mouse sperm bearing multiple t^{lethal} and t^{viable} haplotypes of the T/t-complex 225

LOHE, A. R. The satellite DNAs of *Drosophila simulans* 237

MATSUMOTO, HIDEKI, NAKAZAWA, TERUKO, OHTA, SHIN and TERAWAKI, YOSHIRO. Chromosomal locations of *catA*, *pobA*, *pcaA*, *dcu* and *chu* genes in *Pseudomonas aeruginosa* 251

PUTRAMENT, ALEKSANDRA and EJCHART, ANNA. Mitochondrial mutagenesis in *Saccharomyces cerevisiae*: the origin of *mit*$^-$ mutants 267

HILLIKER, ARTHUR J. and CHOVNICK, ARTHUR. Further observations on intragenic recombination in *Drosophila melanogaster* 281

SPARROW, JOHN C. The recovery and preliminary examination of a temperature sensitive suppressor of the cryptocephal mutant of *Drosophila melanogaster* 297

STYRNA, JÓZEFA and KLEIN, JAN. Evidence for two regions in the mouse *t* complex controlling transmission ratios 315

VEKEMANS, M., TAYLOR, B. A. and FRASER, F. C. The susceptibility to cortisone-induced cleft palate of recombinant inbred strains of mice: lack of association with the *H-2* haplotype 327

SHEEDLO, HAROLD J. and BECK, MELVIN L. Copper localization in the duodenal mucosa of heterozygous tortoiseshell ($Mo^{to}/+$) female mice (*Mus musculus*) 333

LYON, MARY F., JARVIS, SUSAN E., SAYERS, IRENE and HOLMES, ROGER S. Lens opacity: a new gene for congenital cataract on chromosome 10 of the mouse 337

BOOKS RECEIVED 343

INDEX 345